

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Cynthia Soumoff on November 20, 2009.

In the claims:

Please cancel claims 22 and 40.

1. (Currently amended) A method for identifying a compound that regulates the activity of a non-homoserine lactone autoinducer-2 comprising:
(a) comparing the measured activity of non-homoserine lactone autoinducer-2 in the presence of the compound to the measured activity of non-homoserine lactone autoinducer-2 in the absence of the compound; and
(b) identifying the compound that regulates the activity of non-homoserine lactone autoinducer-2, wherein non-homoserine lactone autoinducer-2 is selected from the group consisting of ~~4,5-dihydroxy-2,3-pentanedione~~, 4-hydroxy-5-methyl-2H-furan-3-one, and ~~2,3,4-trihydroxy-5-penten-1-one and 2,5-dihydroxy-2-cyclopenten-1-one~~.

10. (Currently amended) A method for identifying an analog that regulates the activity of a non-homoserine lactone autoinducer-2, comprising:
(a) providing a bacterial cell that is capable of producing a detectable amount of light in response to the non-homoserine lactone autoinducer-2;
(b) contacting the bacterial cell with an analog of the non-homoserine lactone autoinducer-2; and
(c) comparing the amount of light produced by the bacterial cell in the presence and absence of the analog, wherein a change in the production of light is indicative of an analog that regulates the activity of the non-homoserine lactone autoinducer-2, wherein

the non-homoserine lactone autoinducer-2 is selected from the group consisting of ~~4,5-dihydroxy-2,3-pentanedione~~, ~~4-hydroxy-5-methyl-2H-furan-3-one~~, and ~~2,3,4-trihydroxy-5-penten-1-one~~ and ~~2,3,4-trihydroxy-5-penten-1-one~~.

27. (Currently amended) A method for identifying a compound that regulates the production or activity of non-homoserine lactone autoinducer-2, comprising:

contacting a bacterial cell that produces non-homoserine lactone autoinducer-2 with the compound, and

determining whether non-homoserine lactone autoinducer-2 activity is present in the bacterial cell, wherein non-homoserine lactone autoinducer-2 is selected from the group consisting of ~~4,5-dihydroxy-2,3-pentanedione~~, ~~4-hydroxy-5-methyl-2H-furan-3-one~~, and ~~2,3,4-trihydroxy-5-penten-1-one~~ and ~~2,3,4-trihydroxy-5-penten-1-one~~.

36. (Previously presented) A method for detecting a non-homoserine lactone autoinducer-2-associated bacterial biomarker comprising:

- (a) providing at least one bacterial cell that responds to non-homoserine lactone autoinducer-2 by generating a bacterial biomarker;
- (b) contacting said at least one bacterial cell with a non-homoserine lactone autoinducer-2 molecule under conditions and for such time as to promote induction of a bacterial biomarker; and
- (c) detecting the bacterial biomarker, wherein the non-homoserine lactone autoinducer-2 is selected from the group consisting of ~~4,5-dihydroxy-2,3-pentanedione~~, ~~4-hydroxy-5-methyl-2H-furan-3-one~~, and ~~2,3,4-trihydroxy-5-penten-1-one~~ and ~~2,3,4-trihydroxy-5-penten-1-one~~.

39. (Currently amended) A method for detecting an autoinducer-associated biomarker comprising:

- (a) providing at least one cell that responds to an autoinducer by a change in a biomarker of the cell,
- (b) contacting the at least one cell with an autoinducer molecule under conditions and for such time as to promote induction of a biomarker; and
- (c) detecting the biomarker, wherein the autoinducer is not a homoserine lactone, wherein the autoinducer is non-homoserine lactone autoinducer-2, and wherein the

non-homoserine lactone autoinducer-2 is selected from the group consisting of 4-hydroxy-5-methyl-2H-furan-3-one and 2,3,4-trihydroxy-5-penten- 1-one.

41. (Currently amended) The method of claim 40 39, wherein the autoinducer-2 is 4-hydroxy-5-methyl-2H-furan-3-one.

42. (Currently amended) A method for identifying a compound that regulates non-homoserine lactone autoinducer-2 binding to a non-homoserine lactone autoinducer-2 receptor, comprising:

- (a) contacting non-homoserine lactone autoinducer-2 and the non-homoserine lactone autoinducer-2 receptor with the compound to allow non-homoserine lactone autoinducer-2 binding to the receptor;
- (b) contacting the product of (a) with a cell capable of producing light in response to non-homoserine lactone autoinducer-2 binding to the receptor; and
- (c) measuring the effect of the compound on light production, wherein a change in light production in the presence of the compound, compared to light production in the absence of the compound, identifies the compound as one that regulates binding of non-homoserine lactone autoinducer-2 to receptor, wherein the non-homoserine lactone autoinducer-2 is selected from the group consisting of ~~4,5-dihydroxy-2,3-pentanedione, 4-hydroxy-5-methyl-2H-furan-3-one, and 2,3,4- trihydroxy-5-penten-1-one and 4,5-dihydroxy-2-cyclopenten-1-one.~~

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELE K. JOIKE whose telephone number is (571)272-5915. The examiner can normally be reached on M-F, 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached on (571)272-0951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Michele K. Joike/
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